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ABSTRACT

This paper argues for the use of social indicators, in conjunction with the traditional norm-referenced and criterion-referenced tests, to assess the effects of local educational systems. A conceptual framework for the study of educational performance is presented, interrelating: (1) personal resources invested by youth; (2) opportunities for development; (3) developmental behaviors; (4) educational system impacts; and (5) other contextual variables--which together affect progress toward adulthood. Four types of variables (status-descriptive, developmental behaviors, personal investment behaviors, and contextual variables) and 15 content areas that should be monitored are described, with examples of social indicators for each. Procedures are presented for selecting variables, collecting time-series data, and analyzing and reporting the indicators, relying entirely on existing data sources. Appendices include a data base screening form, a statistic screening form, and a list of national, state, county, and city sources of time-series data relevant to youth development and educational performance. (Author/GDC)

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Social Indicators of Youth Development and Educational Performance: A Programmatic Statement*

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I. Advantages of a Social Indicators Approach

Education, as with any profession or industry, needs feedback on the quality and characteristics of its output in relation to its goals. It is necessary to know whether a new process actually improves the product and in what ways the product is likely to be deficient. For two reasons, however, the quality of education is more important than the quality of almost any other sector of the economy: (1) the greatest resource of any country is the potential abilities of its people, and the effectiveness of the educational system is a primary determinant of how much of this potential is realized; and (2) in the case of education, the "products" are "educated" people, and their acquired knowledge and developed abilities strongly influence all aspects of their quality of life. In order to ensure that an educational system is meeting the needs of both individuals and society, diverse kinds of feedback on educational results are needed, not only at the level of the local education agency, but also at the national level.

The types of social indicators that are usually studied at the national level are measures of educational performance at a rather general level (for examples, see Statistics Canada, 1977; Executive Office of the President, 1977; and National Center for Education Statistics, 1977). The reason for this stems largely from the dependency of these indicators on the specification of the educational outcomes they are to assess. Since the statement of desired educational outcomes at the

national level tends to be rather general, it is understandable that governmental agencies almost exclusively monitor such items as rates of enrollment, graduation rates, numbers of advanced and professional degrees obtained, and so on. The development of social indicators that are sensitive to specific educational achievements, that depend on the specification of particular educational outcomes, is clearly a topic whose time has come.

Advantages of Establishing and Analyzing a Social Indicators Data Base

There are several advantages to establishing and maintaining a data base on specific aspects of educational system performance composed of relevant statistical time series. These advantages are briefly described below.

1. Social indicators constructed from time-series data would provide a baseline (past years) against which the current status of educational performance in a variety of areas can be compared.
2. Time series would allow the identification of long-term trends, periodic changes, and fluctuations in rate of change. When deteriorating trends are identified, educational conditions that might affect these trends can be examined more closely in terms of relations among variables in the data base.
3. A social indicators data base would allow researchers and theoreticians to begin testing currently proposed theories of youth development and educational achievement (e.g., which variables they would expect to be associated with other variables and with how much of a time lag).

4. Social indicator models of aspects of youth development and of school-youth interactions could be constructed using time-series data.

5. Social indicator models would permit conditional forecasts of values of key indicators. Such forecasts can serve the needs of educational planners and practitioners in that they allow for actions to be taken before the problems facing youth become severe.

Relation of Social Indicators to Academic Tests

The use of tests and the use of social indicators are mutually supportive procedures for assessing effects of an educational system. Social indicators, when used in coordination with either criterion-referenced or norm-referenced tests, can strengthen or throw into question the validity of test results by providing independent verification regarding whether or not students' successes and failures at life tasks are related to test results. Comparisons of performances measured with social indicators to reported test score trends permit the assessment of what significance these scores have for students' personal and career development, and monitoring educational achievement in terms of life experiences allows these score trends to be characterized in ways the public can easily understand. Consider, for example, how much more meaningful it would be to decisionmakers, to parents, and to students themselves if the reporting of basic mathematics test scores were augmented by the actual rates of mathematical errors by present and former students on income tax forms that resulted in the person being called in

by the revenue agency. Such a practice of reporting information from both test and non-test sources is certainly in keeping with current concerns for making education relevant to work and more generally to life itself.

Developing social indicators of educational performance to supplement norm-referenced and criterion-referenced tests already in use should be of particular interest to local education agencies. Because the development of social indicators based on available data sources does not require large investments of capital and personnel resources as is often the case with large scale testing programs, their development can more reasonably be undertaken at the local level, allowing the flexibility for a different emphasis on educational outcomes in each locality. Most importantly, these indicators are easily understandable by educational decisionmakers and by the public, leading to increased dialogue between educational professionals and concerned parents and citizens and increased appreciation by the public of the educational goals and progress in the locality.

II. Conceptual Framework for the Study of Educational Performance

Social indicators have often been developed and reported in the absence of any explicit theoretical model of the interrelationships among the variables representing various aspects of society. For example, there were no formal theories behind the selection of indicators for Toward a Social Report (Department of Health, Education, and Welfare, 1969). Land (1971) criticized this approach, pointing out that

the success of economic indicators has resulted from the fact that such indicators are interrelated components of economic models in which variation in the values of indicators tells us something about the functioning of the economic system. Without theoretical models of social systems specifying the nature of relationships among indicators of states of the system, such indicators would be inadequate for policy planning. The mere accumulation of time-series data on selected indicators provides little more than descriptive data concerning societal conditions and does not permit separation of the effects of public policies and programs from the impact of social processes, such as migration, urbanization, and industrialization (Sheldon & Freeman, 1970; Anderson, 1973). Since an isolated social indicator usually raises many more questions than it answers, social indicator models need to be constructed in order to interpret trends and changes in social conditions that indicators are intended to monitor. Social indicators then become specifiable as variables that are affected by and may themselves affect other parts of the social system.

Whether the conceptual framework is a well-formulated theory expressed as mathematical equations or an informal model relating inputs to goals, it should in principle facilitate indicator construction in the following ways (Olkinuora, 1973):

- Distinguishing between the essential and the nonessential--a conceptual framework delineates the scope of content of the social indicator data base and justifies why particular variables and indicators have been chosen or excluded from consi-

deration. Theory alone can justify the use of an indicator, because only a theory interrelates variables and, thus, is in a position to explain some of them by others. Only a theory explaining the mechanism by which unobservable variable X is manifested as observable variables Y and Z is capable of justifying the latter set of indicators rather than other observable traits to estimate the values of X.

- Analyzing the essential into its component parts and the relations among those parts--a conceptual framework helps to specify the goal or outcome hierarchies in the social system being monitored.
- Estimating the measurability of phenomena and constructing measurement procedures--a conceptual framework guides the construction of specific definitions of the variables, the selection among alternative statistics for measuring a variable, and the development of indicators. An explicit definition of the concepts helps to develop valid and relevant operationalizations of those concepts. An ad hoc operational measure is virtually impossible to validate and can therefore be hard to use in informing policy discussion.
- Analyzing the relations among input, process, and output variables--a conceptual framework discloses which indicators are measuring key relationships for decisionmaking purposes and can suggest the foreseeable effectiveness of available means and their impact on each sector of concern.

Social indicators are, therefore, most usefully developed as part of a conceptual framework specifying the interrelationships of the variables in the area of social concern. In addition, models of aspects of society based on theory can be made more rigorous by working with social indicator data. Thus, the development of social indicators and of social indicator models are interrelated, since progress in developing social indicators can lead to an improved model of the content area, which in turn may suggest other indicators that should be developed, and so on.

The Educational System and Youth Development

Several social indicator modeling efforts have aimed to characterize processes of the educational system and to relate these processes to student outcomes. King (1972) developed a transition model of the educational system. His aim was to show that it was possible to use basic flow statistics, or "primary" indicators, to calculate a set of derived, or "secondary," indicators that could not be observed directly, but might reveal more about the nature of the system. Secondary indicators were expectations of educational and posteducational levels of attainment defined in terms of the average time spent in these various levels. Olkinuora (1973) developed a social indicator model related to educational quality, relevance of production needs, individual needs and resources, and educational efficiency and costs. Winsborough (1975) developed a model to estimate the effects on earnings (by race) of age, the time period of monitoring birth cohort characteristics, and level of education. Finally, Felson and Land (1977) derived a dynamic macro

social indicator model consisting of 34 equations linking changes in educational enrollments, attainments, and organizations to one another and to certain social, demographic, and economic trends for the United States during the years 1947-1972.

While these modeling efforts have advanced the state-of-the-art of social indicators research, they have been of limited use to educational planners and practitioners. The principal reason for this has been that these efforts have relied on only the most prominent and centralized sources of indicator data. Data sources of this type are usually organized to collect information on the current status of the population and of social and economic conditions with respect to one or more areas of societal concern. As a consequence, these modeling efforts have focused on indicators of the overall condition and outcomes of the educational system, not on indicators of earlier processes in the educational system. Outcome indicators, by themselves, cannot provide guidance for avoiding severe education-related problems; they can only stimulate reactions to these problems. What is needed for a proactive approach to educational planning and practice is a model of the educational system that includes lead indicators of critical youth needs. Rather than stimulating reactions to severe problems presently facing youth, lead indicators would predate these problems by several years and thereby would allow sufficient time for resolving incipient problems before they became critical.

One approach to the identification of lead indicators of youth

needs that would be relevant to educational planning and practice is to focus on developmental processes and the outcomes of these processes that can be affected by the educational system. Relating system inputs to the accomplishment of these developmental tasks would inform system planners and practitioners of areas in which the developmental needs of youth are the greatest. As a result, additional educational resources could be allocated to those areas in order to ameliorate the identified needs. Since the negative effects of problems in development are likely to be cumulative, prompt attention to the developmental needs of youth would reduce the severity of later problems that might confront them.

For the purpose of developing indicators to monitor the performance of educational systems in terms of youth development, a conceptual framework that relates the inputs of these systems to developmental processes and outcomes is required. One such framework is presented in Figure 1. In this informal model, educational system inputs, by augmenting youth resources, by decreasing the amount of youth resources that are required, or by providing additional incentives for the application of resources, can increase opportunities for development. Developmental behaviors occur as a result of individuals taking advantage of these opportunities to the extent possible in a particular context. Developmental behaviors lead to the transition from youth to adult status. These behaviors may also foster continuing development through the creation of additional youth resources or of additional opportunities for growth.

Insert Figure 1 about here

According to this model, schools should not be charged with the responsibility to develop individuals. Rather, schools can only provide opportunities for students to apply (or to invest) their resources in learning activities. Without this view of the school-student relation, one might very well assume prematurely that the school alone was at fault if a student was not learning. With the distinction between providing opportunities and applying personal resources in mind, on the other hand, one would want to investigate: (1) whether the school was providing the proper opportunities for learning (and if not, why not); (2) whether the student was making a sufficient effort to learn (and if not, why not); and (3) whether factors beyond the control of both the school and the student were acting to limit available opportunities or to constrain the use of personal resources. The appropriate remedial actions would depend upon whether the lack of developmental activity was due to the lack of available opportunities, the lack of individual effort in spite of sufficient opportunities, or the presence of negative contextual influences.

Types of Variables to Be Monitored

Based on this conceptual framework, four types of variables should be monitored to assess the performance of educational systems: (1) status-descriptive variables, (2) developmental behaviors, (3) personal investment behaviors, and (4) contextual variables. The first three types of variables are required for monitoring developmental

processes and outcomes while the fourth type is needed to monitor youth resources, educational system inputs and the opportunities they augment, and other variables that describe the context in which development is occurring. Each of these variables is described below.

Status-descriptive variables. Status-descriptive variables are assessed for the entire population and can be disaggregated by age. The value of a status-descriptive variable might or might not vary greatly as a function of age. The functional literacy rate, morbidity and mortality rates, and level of educational attainment are examples of status-descriptive variables. The significance of this type of variable is that, in describing the achievements and problems of youth relative to other age-groups, it allows identification of needs and problems that are especially critical for young people.

There are three disadvantages to relying solely on this type of variable. First, since indicator data for status-descriptive variables will be accessed from existing data sources, the contextual variables to disaggregate or to help in interpreting the indicator will be restricted to those that the data base has included. Second, since these variables are assessed on the adult population, they are often available only for older youth, that is, those in the 16-21 year age-range. The third disadvantage to relying solely on status-descriptive variables is that they tend to focus on "problems" without describing the antecedent conditions that need to be changed to reduce the severity of the problems in the future. In other words, status-descriptive variables often measure only the end-states of long sequences of causes and effects.

Developmental behaviors. While status-descriptive variables are necessary for monitoring educational performance, they are not, for the reasons outlined above, sufficient for monitoring the status and the development of youth. Social indicators must be developed that have relevance specifically for youth. Observable behaviors and conditions that indicate youth are developing in a manner that is both healthy for them and potentially productive for society must be monitored. Konopka's (1973) list of conditions for the healthy development of young people suggests several categories of behaviors from which specific developmental variables should be selected. These categories include:

- participation as citizens, as members of a household, as workers, as responsible members of society;
- gaining experience in decisionmaking;
- interaction with peers (and acquisition of a sense of belonging);
- reflection on self in relation to others (and discovering self by looking outward as well as inward);
- discussion of conflicting values (and formulation of a personal value system);
- experimenting with relationships to other people, with ideas (i.e., trying out various roles without irrevocable commitment);
- development of a sense of accountability (in the context of a relationship among equals); and

- cultivation of a capacity to enjoy life.

Unlike status-descriptive variables, which can be useful in stimulating responses or reactions to a problem on the part of educational agency officials and practitioners, developmental variables describe the occurrence of behaviors and conditions that are essential to positive development. Monitoring these behaviors permits the detection and the amelioration of developmental needs before they contribute to more serious problems for youth. Because developmental variables measure changes that take place among certain age-ranges, their values almost always vary as a function of age (unlike status-descriptive variables, which do not necessarily vary as a function of age). For example, the refinement of job-seeking or other career preparatory skills would not be an area of activity for many youth below the age of 14-17 years.

Personal investment behaviors. Personal investment is a specific kind of developmental behavior that is especially worth monitoring. Investment is defined as the voluntary risk of personal resources by individuals in the expectation of a future return in excess of the expenditure. In particular, personal investment consists of observable behaviors that may have major, long-term positive effects on a person's status or capabilities. Both behaviors that may improve a person's status or capabilities (e.g., taking a night course to prepare for a better job) and behaviors that may prevent a deterioration in a person's status or capabilities (e.g., quitting smoking) are included. Investment behaviors are among the most influential self-initiated actions for youth development. Because these behaviors (by definition) may result

in major, long-term changes in the development of youths, special effort should be made to identify and to monitor them.

The personal investment concept was formulated and used originally in Thailand to characterize individual development as part of a six-year project to develop indicators of the effectiveness of rural development programs (Krug et al., 1976). Murray (1977) showed how the concept of personal investment was especially well suited to identifying variables involved in the transition from a traditional to a modern outlook. He noted that personal risk and expected benefit, which are entailed by the investment concept, captured precisely the expanding aspirations and attitudes toward change that characterize personal modernity and differentiate this perspective from that of the peasant. With the personal investment concept, it became possible to relate systematically the various types of inputs provided by the rural development programs to the development of individuals and villages.

A second application of the personal investment construct to understanding individual development was made in the context of evaluating the VISTA program (Gilmartin et al., 1977). A fundamental problem with emphasizing "providing services to reduce poverty" is that a caste of clients is created. As the number of clients increases relative to the services available for them, poverty conditions can only deteriorate further. It was proposed that volunteers redirect their efforts and instead help poor people take action to ameliorate the poverty-related conditions facing them. The personal investment construct was used as an heuristic tool in identifying individual behaviors that might result

in major, long-lasting changes in the ability of poverty community members to control and improve their situation. The opportunity construct, in this context, was used to identify VISTA volunteer activities in a variety of areas that could reasonably be expected to facilitate this kind of investment.

Contextual variables. For each of the three kinds of variables previously discussed (i.e., status-descriptive, developmental, and personal investment), related contextual variables will have to be monitored also. Measures of a status-descriptive variable, such as youth unemployment, would be difficult to interpret if contextual data on other labor market conditions were not also available. Similarly, measures of a developmental variable, such as youth participation in organized sports, would be more understandable if levels of participation could be described separately by organizing institution (e.g., school, youth club, religious organization). Measures of available resources, perceived costs of resource use, and expected returns will often serve as contextual variables for interpreting developmental and personal investment behaviors. Contextual variables will usually be used to disaggregate social indicators based on the other three kinds of variables. Often, contextual variables will disclose an interaction in the relation between two social indicators (e.g., the economic condition of a community may mediate the relation between the presence of opportunities for personal investment and the actual occurrence of investment behaviors). A social indicator is far more informative when it can be analyzed in terms of a number of contextual variables.

Contextual variables that can affect the levels of status-descriptive, developmental, and investment variables should, ideally, be measured from the same sources as these variables. For indicators based on existing data sources, contextual variables are restricted to the associated variables in the data source. Because the data are usually accessed in aggregated form from existing sources (e.g., counts, means), it is not easy to relate additional contextual variables to these indicators. For social indicators based on surveys, however, there are no such restrictions. Any variable that can be included in the survey or can be associated with individual respondents in some other manner can serve as a contextual variable for all the indicators based on the survey.

Areas of Concern for Youth Development

The types of variables required by the conceptual framework have been described without addressing the question of what content areas should be monitored. Realistically, the scope and breadth of the monitoring effort will probably be determined primarily by the amount of resources available for the effort. Nevertheless, a wide range of content matters should be considered for inclusion so as not to unduly restrict the scope.

Since youth development refers to the transition from childhood to adulthood, it would seem reasonable to monitor the status and development of youth in content areas related to the components of quality of life for adults. For example, if the quality of their interpersonal relations is important to most adults, then the development of interpersonal skills should be monitored for youth.

This approach to determining potential areas of concern for the data base is more inclusive than considering only youth-institution interactions. Although every area of development is affected by several social institutions (e.g., the school, the community, and the family), these effects may not be well recognized. If only youth-institution interactions are considered, some important areas of development to adulthood may be neglected. In addition, each institution affects youth in many different ways, only some of which are intended. A focus on school-youth interactions, in the present case, would emphasize the intended effects of schools (e.g., cognitive development). In contrast, a focus on a wide range of youth development areas reveals that schools affect the development of young people in many other ways (e.g., relations with friends, preparation for being a parent, and civic development).

Many lists of quality of life components have been prepared on the basis of sociological and psychological theories (e.g., Allardt, 1972, 1973), on the use of multiple-item surveys and factor analysis (e.g., Andrews and Withey, 1976), and on open-ended, structured interviews with special populations (e.g., Blau, 1977). In addition, attempts have been made to specify the principal determiners of life quality by means of synthesizing the results of several quality of life studies (e.g., U.S. Environmental Protection Agency, 1973) and on the basis of reviews of this sort followed by discussion among experts from selected fields (e.g., American Assembly, Columbia University, 1960).

Flanagan and Russ-Eft (1975), on the other hand, systematically developed a set of components based on the factors that a diverse sample of persons recalled as having contributed either positively or negatively to their quality of life. The critical incident technique was used to collect and categorize the data. (The data collection and categorization procedures of the critical incident technique have been explained in Flanagan, 1954, 1962.) More than 6,000 critical incidents were collected from over 2,800 people of varied backgrounds across the United States. Typical questions used to collect the critical incidents were "Think of the last time you did something that was very important to you or had an experience that was especially satisfying to you" and "Think of a time you saw something happen to another person that was harmful or made his or her life worse in some way." After naming a specific incident, the people were asked to describe what exactly happened, what they (or someone else) did, and why this was important to them (or someone else). Analyses of these critical incidents revealed that they formed 15 components related to people's quality of life. The 15 components and the percentage of young adults who considered each component to be important or very important are displayed in Table 1.

Insert Table 1 about here

This approach to identifying areas of concern for youth development is significant because it does not rely solely upon theory. Instead, the variables used to monitor educational performance can be based on

their importance for achieving desirable levels of quality of life as an adult. Examples of status-descriptive, developmental, personal investment, and contextual variables in each of these 15 areas of concern for youth development are presented in Table 2.

Insert Table 2 about here

III. Procedures for Selecting Variables and Collecting Data

Both the number and the nature of status-descriptive, developmental, personal investment, and contextual variables that are selected for monitoring should depend on the information needs of persons who are to be informed by social indicator reports. On the one hand, governmental officials, community legislators, and other policymakers will rely on these reports to inform them of youth needs and problems that should be addressed. On the other hand, local education agency staff and parents will use these reports to guide and to evaluate their work. While individuals in both groups will share many of the same concerns for youth, their particular orientations define distinct information needs.

Policymakers must be primarily concerned for the general well-being of the citizenry. Because of this orientation, a deteriorating condition will be considered a critical youth problem if it is either (1) a condition that is believed to be good for all citizens over a certain age (e.g., employment) or (2) a condition that is believed to be good for youth in particular in terms of the perceived needs of society

(e.g., achievement test scores). From this perspective, variables that should be monitored are (1) those that describe the status of youth in important areas of concern relative to other age-groups and (2) those that describe the development of youth in ways that will help them meet the perceived needs of society.

Local education agency staff and parents, on the other hand, are primarily concerned that the transition from childhood to adulthood be made as constructively as possible. Because of this orientation, a deteriorating condition will be considered a critical youth problem if it concerns behaviors that are believed to contribute to the healthy development of young people. These behaviors can be classified into two categories: (1) behaviors that theories of youth development suggest are essential for growth to adulthood (e.g., participating in group work efforts, dating), and (2) behaviors that are self-initiated by youth for the purpose of gaining long-term improvements in their status or capability (e.g., enrolling in a Red Cross lifesaving class). From this perspective, variables that describe behaviors associated with the transition to adulthood and, in particular, those behaviors that are directed toward longer-term, personal benefits should be monitored.

If social indicator reports are to be understandable to policymakers, local education agency staff, and parents, contextual variables will also have to be included in them. In particular, contextual variables should be monitored and reported if they are useful for (1) suggesting explanations of changes in the values of selected status-descriptive, developmental, and personal investment variables or (2) dis-

covering differential changes in the status of various groups of youth.

Procedures for Selecting Variables

Initial lists of key variables in the areas of concern for youth development can be prepared by youth development experts serving as consultants or by education agency staff on the basis of current youth development theories in each of the 15 areas. In either case, the relationships among the variables that are identified should be explicitly stated, since the relationships are likely to suggest groups of variables for which indicator data should be collected simultaneously. Neglect of these relationships during indicator data collection can render the information that is gathered useless for educational planning or practice, because some comparison information was not gathered at the same time. For example, a decision to allocate educational resources to activities aimed at increasing the participation of youth in the work world might depend on evidence that these activities are currently having an effect on young people, causing them to be better prepared for anticipating and making career decisions. To evaluate the effects these activities are having on youth, it is crucial to gather information not only on the youth who have participated in them but also on those youth who have not participated in order to assess what level of career decisionmaking abilities might be expected in the absence of these activities.

Initial lists of variables and the relationships among variables should be shared with policymakers, other educational agency staff, and parents in order to elicit their views concerning which variables are

most important for monitoring. A variety of approaches to these interactions is available. Informal discussions, the creation of task forces to oversee variable selection in particular areas of concern, and small-scale surveys to identify special concerns for youth or to ascertain the relative importance of youth needs are examples of methods that can be used. Whatever approach is taken, these interactions with potential consumers of social indicators reports should be aimed not only at refining variable lists but also at building a constituency for the monitoring effort.

A constituency within and outside the educational system is essential for maintaining the level and the consistency of support that is required for the analysis and reporting of trends in selected variables over time. For example, if funds are not available to collect data to update particular indicators according to schedule, there will be gaps in the time series for these indicators, and interpretation of trends will be difficult. Likewise, changes in policies or public attitudes toward agency responsibilities that would entail major changes in focus, changes that would replace or redefine many of the indicators, will render the indicator data base useless for trend analysis.

Collection of Indicator Data

Social indicator reports prepared by local education agency staff can be based on classroom, local education agency, or community data. However, the use of national-level data on the developmental status of young people should also be considered. Reports that permit the comparison of local versus national trends are likely to be more useful in

assessing education agency status. In particular, the use of national data that can be disaggregated by school district or by census tract allows comparisons to be made to other education agencies and locales that are similar in size, geography, and on other contextual variables.

Because the analysis of time-series data relies on existing data that have been collected regularly over many years, a thorough search should be made for relevant data bases and archives, whether maintained centrally or by individual institutions. Criteria should be established for selecting the most promising data sources for closer examination. These criteria will likely include (1) relevance to the variables that have been selected for monitoring; (2) representativeness in terms of the national or local population; (3) regularity and frequency with which the data have been collected; and (4) accessibility.

The first criterion must be applied cautiously, since existing data sources will not always provide direct measures of the selected variables. Because existing sources can suggest new ways of defining these variables and may suggest new variables that should be monitored, rejection of a data source related to one of the areas of concern should not be based solely on its inability to provide direct measures of the variables that have been selected.

The criterion of representativeness should also be applied with care. In special cases, it may be necessary to examine data sources that are not representative of the population. Certain variables that are considered to be important and for which data cannot be obtained by

any other means may require the use of nonrepresentative data sources. For screening purposes, however, the importance of this criterion lies in its requiring an explicit justification for the inclusion of any data source that is not representative.

The remaining two criteria can be applied with less concern for exceptional cases, since they define characteristics of a data source that are essential for its use in the analysis of trends. The data must be updated with regularity so that trends over time are interpretable. Likewise, data collections must occur with sufficient frequency to be responsive to meaningful changes in the variable. Finally, if the data cannot be accessed with relatively little difficulty and by means of straightforward agreements with data source managers, that data source may not be worth the trouble relative to other alternative data sources.

Whether or not a data source meets the screening criteria can be determined through telephone contacts with data source managers and careful review of written materials describing data source contents and procedures. Materials that describe ways in which the data have been used in the past by researchers should also be collected. Data sources that are acceptable in terms of the screening criteria should be examined more closely. This will involve identifying and screening for acceptability particular statistics that are available or can be derived from the data source.

Statistics should be selected for further examination if they can be related directly or indirectly to the variables of interest. Since there is no procedure that can be employed to make this selection rou-

tine, a measurement rationale should be prepared for each statistic that is considered. A measurement rationale, which justifies in writing why the statistic should be regarded as a measure of the variable, provides a useful reference for selecting among alternative statistics for a variable.

In addition to the measurement rationale for each statistic that is examined, a record should be kept of (1) the variable or variables for which it is relevant, (2) whether it is a direct or an indirect measure of the variable, (3) any available information related to its validity, reliability, intertemporal comparability, stability, responsiveness, age-relatedness, other disaggregatability, intergroup comparability, and breadth of application, (4) information on how the data were collected, and (5) information on how they have been used in analysis (e.g., whether or not case weights have been developed to correct for over- or undersampling of particular populations or to correct for nonresponse bias). Telephone contacts with data source managers can be relied upon to supply additional information that may be required later when choosing between two potential data sources for the same variable.

One should avoid prematurely rejecting an indirect indicator for some variable because a direct indicator has already been found. A statistic that can serve as an indirect indicator for several variables, even if direct measures are available, may supplement interpretation of these variables at a low cost per variable. When two or more indirect measures of a variable are identified and are related to the variable in the same way, only one should be selected for further consideration.

For example, if the variable to be measured were public involvement in the local schools, it would not be the best use of resources to monitor both attendance at school board meetings and attendance at parent-teacher association meetings. Both of these indicators are based on the same assumptions regarding the manner in which attitudes are translated into behavior, and both are likely to be influenced by the same contextual factors (e.g., size of school district, distance of schools from communities served). Of course, if the indicators are indirectly related to the variable in different ways, both could be included in the data base, since they would be supplying independent information concerning the variable. To continue with the previous example, attendance at local school board meetings could be meaningfully supplemented by an indicator such as the percentage of voters in the last election who supported the selling of school bonds since, in this case, each indicator is related to public involvement by a different set of assumptions.

From reviews of written materials describing individual statistics, it is not likely that precise determinations can be made concerning their validity, reliability, and so on. As a result, any information on a statistic that can be expected to affect its status on one of those dimensions should be recorded. For example, noting that a statistic cannot be disaggregated by sex will be important if sex is necessary to interpretation of levels of the variable (e.g., participation in various types of club activities). These records should be kept in the form of anecdotal summaries and should make explicit where the information was originally found. Examples of forms that have been pilot tested and

used in the evaluation of data bases and statistics for use in social indicator development are presented in Appendix A.

Developmental variables must be specific to youth. However, data from archival sources that are maintained by individual institutions will not always be disaggregatable by age. Data from settings where age was not recorded for each person can nevertheless be age-related in two ways. (1) Data can be used from situations where only youths could participate, but where individual ages were not recorded. Youth clubs, recreation department records, and sales of reduced-price admittance tickets for youth are examples of such data sources. (2) Data can be used from situations where youth would have been the predominant, but not exclusive, participants. Attendance at exhibits and entertainment of special interest to youth and sales of products used primarily by youth are examples of this second kind of data source.

Examples of national, state, and local data sources in the United States that are possible sources of youth-specific indicator data on educational performance are presented in Appendix B. Evaluations of these sources have demonstrated their potential for providing time-series data relevant to the study of youth development and educational performance (as characterized by the conceptual framework presented in Section II).

IV. Analysis and Reporting of Time-Series Data

It is crucial that the values of the selected indicators over time be neither inflated nor underestimated due to sources of extraneous variation, such as changes in the population composition, monetary

inflation, and so on. (Of course, what is considered to be extraneous can only be determined with reference to the conceptual framework and the purpose for which the indicator is being used.) Thus, it is important in preparing time-series data for analysis to identify irrelevant sources of variation and to correct for them by transforming the raw values of the indicators into estimates of what the values would have been if the extraneous variation had not occurred.

Time-series data can be used to assess the effects of particular educational system interventions in three ways. First, the degree of change in direction or in magnitude of a time series describing the status of youth due to a particular intervention can be assessed and tested for statistical significance. Campbell (1967, 1969) and Glass et al. (1975) have advocated the use of this approach to assess causal claims and have described methods for the design and analysis of time-series experiments. Second, informal comparisons can be made between time-series or other documented information describing educational system inputs and time-series that describe the status of youth development. While this approach relies more on individual judgment than statistical test, it does allow for a broader perspective on the effects of educational processes. In particular, this approach may suggest relationships between inputs and outcomes that would not normally be considered because they were not intended. Ferriss (1969, 1974) used this approach to show that educational indicators had responded to major events, such as changes in the selective service policies, military expansion, and increases in unemployment.

The third approach to assessing the effects of educational system variables on youth development using time-series data involves regression analysis. More specifically, this approach systematically associates developmental process and outcome variables with contextual variables to determine whether trends in these variables are related over time. Social indicator models of this type that describe changes in conditions and behaviors affecting youth development will increase understanding of aggregate measures of the status of youth. Structural equation models that interrelate population trend data that are disaggregatable by age can specify the strength and direction of influences among trends for various age-groups. Models that interrelate these trend data with developmental data can, in addition, help to explain why certain trends have occurred. In a given area of concern, therefore, these models will assist in evaluating present programs and in planning new efforts targeted at youth.

The reporting of indicator data should be planned so as to permit identification of meaningful trends. This involves two principal considerations. First, data should not be reported for such short time periods that fluctuations of relatively minor importance are dominant. Consider, for example, charting the local weekly crime rates, which are likely to fluctuate meaninglessly around rashes of crime. Second, data should not be reported so infrequently as to not meet the requirements of policymaking. When decisions have to be made, even data that display a trend that is not quite as "smooth" as would otherwise be preferable

should be available to inform the decisionmaker. This should not suggest that caution regarding extraneous variation or natural fluctuations be thrown to the wind, but rather that the needs of program planners and decisionmakers must be kept in mind at all times.

American Institutes for Research

Palo Alto, California

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Footnotes

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Table 1

Components Comprising Quality of Life, Categorized by Areas of Human Development

PHYSICAL AND MENTAL HEALTH DEVELOPMENT

A. Health and personal safety (98%)*

Enjoying freedom from sickness, possessing physical and mental fitness, avoiding accidents and other health hazards. Problems related to alcohol, drugs, death, and aging are also included. Effective treatment of health problems is a large component.

B. Personal understanding and planning (88%)

Developing and gaining orientation, purpose, and guiding principles for one's life. This may involve becoming more mature, gaining insight into and acceptance of one's assets and limitations, experiencing and awareness of personal growth and development, and realizing the ability to influence the course of one's life significantly. It also includes making decisions and planning life activities and roles. For some people, a major component arises from religious or spiritual experiences or activities.

INTERPERSONAL DEVELOPMENT

C. Relations with parents, siblings, or other relatives (76%)

Having parents, siblings, or other relatives. In these relationships, one experiences communicating with or doing things with them, visiting, enjoying, sharing, understanding, being helped by, and helping them. The feeling of belonging and having someone to discuss things with is a large component.

INTELLECTUAL AND CREATIVE DEVELOPMENT

H. Intellectual development (84%)

Learning, attending school, acquiring desired knowledge and mental abilities, graduating, and problem solving. Other aspects involve improving understanding, comprehension or appreciation in an intellectual area through activities in or out of school.

I. Creativity and personal expression (50%)

Showing ingenuity, originality, imagination in music, art, writing, handicrafts, drama, photography, practical or scientific matters, or everyday activities. This also includes expressing oneself through a collection, a personal project, or an accomplishment or achievement.

J. Passive and observational recreational activities (55%)

Participating in various kinds of passive recreation, such as watching television, listening to music, reading, going to the movies, and going to entertainment or sports events. It also involves appreciating the art and beauty in many aspects of life.

K. Active and participatory recreational activities (55%)

Participating in various kinds of active recreation, such as sports, hunting, fishing, boating, camping, vacation travel, and sightseeing. This may also involve such activities as playing sedentary or active games, singing, playing an instru-

D. Relations with friends (75%)

Having close friends. In these relationships one shares activities, interests, and views. Important aspects of these relationships involve being accepted, visiting, giving and receiving help, love, trust, support, and guidance.

E. Relations with spouse (girlfriend or boyfriend) (92%)

Being married or having a girlfriend or boyfriend. The relationship involves love, companionship, sexual satisfaction, understanding, communication, appreciation, devotion, and contentment.

F. Socializing (51%)

Entertaining at home or elsewhere, attending parties or other social gatherings, meeting new participation in socializing organizations and clubs.

G. Having and raising children (88%)

Having children and becoming a parent. This relationship involves watching their development, spending time with them and enjoying them. Also included are things like molding, guiding, helping, appreciating, and learning from them and with them.

Note: From Table 2 of Flanagan and Russ-Eft (1975).

*The numbers in parentheses are the percentages of 30-year-olds who considered the component to be important or very important for their quality of life (Flanagan & Russ-Eft, 1975).

CAREER DEVELOPMENT

L. Occupational role (job) (90%)

Having interesting, challenging, rewarding, worthwhile work in a job or home. This includes doing well, using one's abilities, learning and producing, obtaining recognition, and accomplishing on the job.

M. Material well-being and financial security (78%)

Having good food, home, possessions, comforts, and expectations of these for the future. Money and financial security are typically important factors. For most people filling these needs is primarily related to their efforts or those of their spouse.

CIVIC DEVELOPMENT

N. Activities relating to local and national governments (45%)

Keeping informed through the media; participating by voting and other communications; having and appreciating one's political, social, and religious freedom. One component of this includes having living conditions affected by regulations, laws, procedures, and policies of governing agencies and the individuals and groups that influence and operate them.

O. Activities related to helping or encouraging other people (65%)

Helping or encouraging adults or children (other than relatives or close friends). This can be done through one's efforts as an individual or as a member of some organization, such as a church, club, or volunteer group, that works for the benefit of other people.

Table 2

Examples of the Four Types of Variables in the Areas of Concern for Youth

	Area of Concern	Status-Descriptive Variable	Developmental Variable	Personal Investment Behavior	Contextual Variable
A.	Health and personal safety	Morbidity and mortality rate, by cause	Knowledge of common safety rules	Percent following a regular program of physical conditioning	Air quality rating of the community
B.	Personal understanding and planning	Percent of persons undergoing psychological counseling	Accuracy of estimated class standing	Percent having independently arranged to take an interest or personality inventory	Availability of qualified school counselors
C.	Relations with parents, siblings, or other relatives	Percent of families with only one head of household	Extent of involvement in making family decisions	Percent writing letters to relatives regularly	Number and ages of siblings
D.	Relations with friends	Percent of persons reporting that they are lonely	Extent of tolerance for differing points of view	Percent having regularly helped a friend who was having trouble in a school subject	Number of persons of the same age living in the neighborhood
E.	Relations with spouse (girlfriend or boyfriend)	Percent married, divorced	Frequency and type of dating	Percent purchasing and using birth control devices	Availability of sex education
F.	Socializing	Mean hours per day spent visiting with neighbors and friends	Percent belonging to youth clubs	Percent having enrolled in social dancing classes	Distance from home to school
G.	Having and raising children	Age at birth of first child	Amount of experience baby-sitting or caring for younger children	Percent having read a book on proper parenting	Relative ages of younger siblings

Table 2 Continued

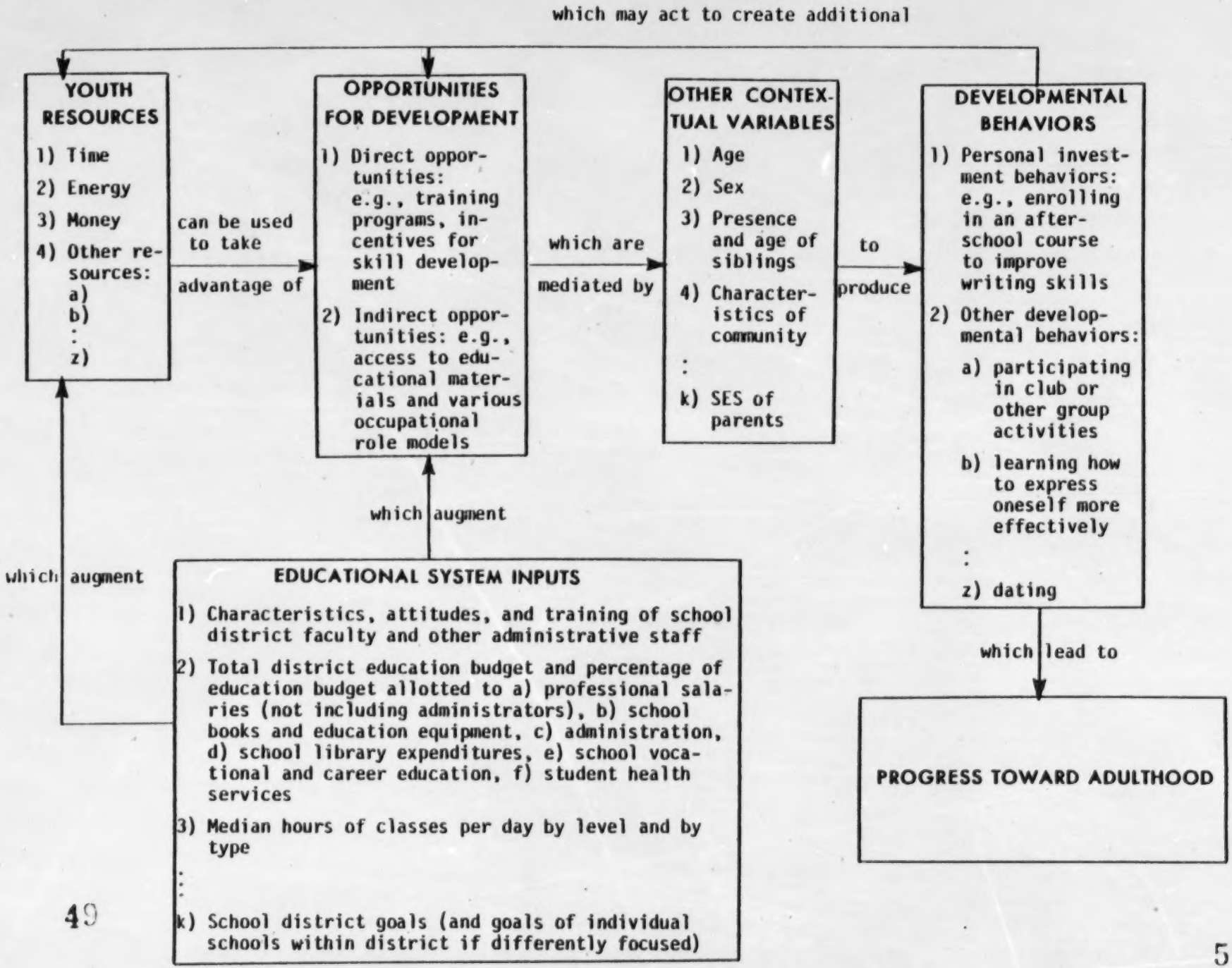
	Area of Concern	Status-Descriptive Variable	Developmental Variable	Personal Investment Behavior	Contextual Variable
H.	Intellectual development	Functional literacy rate	Tested level of academic knowledge and cognitive abilities	Percent reading literature or non-fiction outside of school	Education level of parents
I.	Creativity and personal expression	Percent participating in arts, crafts, or playing a musical instrument	Percent having learned the basic skills involved in household carpentry, cooking, sewing and gardening	Percent taking music lessons	Amount of creativity in parents' occupations
J.	Passive and observational recreational activities	Mean hours per day of television watched, by type of program	Amount of knowledge about classical music, ballet	Percent having read a book to improve their ability in chess, go, backgammon, or some other game	Level of parents' interest in art and music
K.	Active and participatory recreational activities	Rate of participation in recreational activities, by type	Percent having participated on a competitive athletic team	Percent having taken lessons to learn a new sport	Availability of recreational facilities, equipment, and personnel
L.	Occupational role (job)	Percent of persons who consider their work to be interesting, challenging	Extent of knowledge concerning the types of activities performed in various occupations	Percent having taken a part-time or summer job in order to learn whether or not they would enjoy that kind of work as a career	Extent of career exploration in the local school curricula

Table 2 Continued

	Area of Concern	Status-Descriptive Variable	Developmental Variable	Personal Investment Behavior	Contextual Variable
M.	Material well-being and financial security	Unemployment rate	Extent of knowledge concerning the security and mean salaries of groups of occupations	Percent having taken a work skills course in order to be eligible for a higher paying job	Parents' economic status
N.	Activities relating to local and national governments	Percent of persons eligible who register to vote	Extent of knowledge concerning the structure and function of local, state, and federal governments	Percent having actively participated in a campaign to change an undesirable law or regulation	Availability of a civics curriculum in the local school
O.	Activities related to helping or encouraging other people	Percent of persons engaging in some voluntarism	Extent of knowledge concerning volunteer organizations in the community	Percent having committed themselves to a long-term volunteer position (e.g., as a helper in a hospital)	Extent of recruiting by community volunteer groups

Figure Caption

Fig. 1. Conceptual framework for the study of youth development and educational performance


which may act to create additional
YOUTH RESOURCES
1) Time
2) Energy
3) Money
4) Other resources:
a)
b)
:
z)
can be used to take advantage of
OPPORTUNITIES FOR DEVELOPMENT
1) Direct opportunities: e.g., training programs, incentives for skill development
2) Indirect opportunities: e.g., access to educational materials and various occupational role models
which are mediated by
OTHER CONTEXTUAL VARIABLES
1) Age
2) Sex
3) Presence and age of siblings
4) Characteristics of community
:
k) SES of parents
to produce
DEVELOPMENTAL BEHAVIORS
1) Personal investment behaviors: e.g., enrolling in an after-school course to improve writing skills
2) Other developmental behaviors:
a) participating in club or other group activities
b) learning how to express oneself more effectively
:
z) dating
which lead to
PROGRESS TOWARD ADULTHOOD
which augment
which augment
EDUCATIONAL SYSTEM INPUTS
1) Characteristics, attitudes, and training of school district faculty and other administrative staff
2) Total district education budget and percentage of education budget allotted to a) professional salaries (not including administrators), b) school books and education equipment, c) administration, d) school library expenditures, e) school vocational and career education, f) student health services
3) Median hours of classes per day by level and by type
:
k) School district goals (and goals of individual schools within district if differently focused)

APPENDIX A

Data Base Screening Form

and Statistic Screening Form

NOTES:

DATA BASE SCREENING FORM

AGENCY NAME: _____

DATA SOURCE NAME: _____

FILE/SERIES NAME: _____

DATA SOURCE TYPE: () TAPE () PUBLICATION () OTHER _____

CONTACT FOR DATA SOURCE CONTENT: _____

_____

_____

_____

CONTACT FOR DATA SOURCE ACCESS: _____

_____

_____

_____

PRINTED REPORTS AVAILABLE: _____

_____

_____

COST & NUMBER OF REELS/VOLUMES: _____

_____

DATA BASE MANUAL/TAPE FORMAT AVAILABLE: _____

_____

ORIGINAL SURVEY FORM AVAILABLE: _____

_____

OBJECTIVES OF DATA SOURCE: _____

_____

_____

DATE(S) OF COLLECTION: _____

PERIODICITY OF COLLECTION: _____

MANNER OF COLLECTION: _____

_____

LAG BETWEEN COLLECTION AND AVAILABILITY OF DATA: _____

_____

POPULATION SURVEYED: _____

_____

_____

_____

INTERTEMPORAL COMPARABILITY: _____

_____

_____

DATA CAN BE REPORTED BY:

() State	() Census Tract	() Grade Level
() County	() SMSA	() _____
() City	() Age	() _____
() School District	() Race	() _____
() School or Institution	() Sex	() _____
() Individual	() SES	() _____

OTHER METHODOLOGICAL FEATURES: _____

_____

_____

LIST OF SIGNIFICANT VARIABLES:

1. _____	7. _____
2. _____	8. _____
3. _____	9. _____
4. _____	10. _____
5. _____	11. _____
6. _____	12. _____

CONFIDENTIALITY RESTRICTIONS: _____

AGENCY WILL PERFORM SPECIAL TABULATIONS: _____

AGENCY WILL PERFORM SPECIAL ANALYSES: _____

PROJECTED LAG FROM REQUEST TO RECEIPT OF DATA: _____

DATA SHARING/REPORTING PROCEDURES: _____

_____

_____

STATISTIC SCREENING FORM

AGENCY NAME: _____

DATA SOURCE NAME: _____

FILE/SERIES NAME: _____

CONTACT FOR DATA SOURCE INFORMATION: _____

_____

_____

_____

STATISTIC NAME: _____

DESCRIPTION OF STATISTIC: _____

_____

_____

VARIABLES FOR WHICH STATISTIC IS RELEVANT: _____

_____

_____

DATE(S) OF COLLECTION: _____

PERIODICITY OF COLLECTION: _____

MANNER OF COLLECTION: _____

_____

POPULATION SURVEYED: _____

_____

_____

_____

CODING: _____

SPECIFY: () ORDINAL SCALE () INTERVAL SCALE () RATIO SCALE

TYPE OF STORAGE: _____

_____

LAG BETWEEN COLLECTION AND AVAILABILITY: _____

_____

PROJECTED LAG FROM REQUEST TO RECEIPT OF DATA: _____

CHANGES IN POPULATION SURVEYED: _____

_____

_____

_____

CHANGES IN CODING: _____

_____

_____

_____

CHANGES IN ITEM WORDING: _____

_____

_____

_____

OTHER CHANGES IN METHODOLOGY: _____

_____

_____

_____

STATISTIC CAN BE REPORTED BY:

() State	() Census Tract	() Grade Level
() County	() SMSA	() _____
() City	() Age	() _____
() School District	() Race	() _____
() School or Institution	() Sex	() _____
() Individual	() SES	() _____

USE IN OUTSIDE-AGENCY ANALYSES:

1: _____

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2: _____

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3: _____

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_____

_____

4: _____

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APPENDIX B

National, State, County, and City Sources of Time-Series Data Relevant to Youth Development and Educational Performance

National Data Sources (United States)

Administrative Office of the United States Courts

Federal Offenders in the Unites States District Courts (annual)

Persons Under the Supervision of the Federal Probation System (annual)

American Council on Education

National Norms for Entering College Freshmen (annual)

American Dental Association

Survey of Dental Practice (triennial)

American Hospital Association

Hospital Statistics (annual)

Boy Scouts of America, National Council

Annual Report (annual)

Girl Scouts of the United States of America

Annual Report (annual)

Metropolitan Life Insurance Company, New York

Statistical Bulletin (monthly)

National Catholic Educational Association

A Report on United States Catholic Schools (annual)

National Education Association, Washington, District of Columbia

Estimates of School Statistics (annual)

Teacher Supply and Demand in Public Schools (annual)

National Foundation on the Arts and the Humanities

Annual Report (annual)

National Safety Council, Chicago, Illinois

Accident Facts (annual)

R. R. Bowker Company, New York

Educational Media Yearbook (annual)

The Travelers Insurance Company

The Travelers Book of Street and Highway Accident Data (annual)

United States Department of Agriculture

Agricultural Research Service

Family Economic Review (quarterly)

National Food Situation (quarterly)

Economic Research Service

The Hired Farm Working Force (annual)

Food and Nutrition Service

National School Lunch Program (annual)

Statistical Reporting Service

Farm Labor (monthly)

United States Department of Commerce

Bureau of the Census

Census of Population (decennial)

Current Population Reports, Series P-20 (Population Characteristics) (irregular)

Current Population Reports, Series P-23 (Technical Studies) (irregular)

Current Population Survey, October Supplement (annual)

Statistical Abstract of the United States: National Data Book and Guide to Sources (annual)

United States Department of Health, Education, and Welfare

National Center for Education Statistics

Bond Sales for Public School Purposes (annual)

Census Public Use Extracts of 14-21 Year Olds (decennial)

1960-1970 State High School Dropout Summary File (decennial)

1970 Neighborhood High School Dropout Summary File (decennial)

State Youth Extract Files (decennial)

Census School District Fourth Count (decennial)

Census School District Fourth Count/ELSEGIS (decennial/annual)

The Condition of Education, 197- (annual)

Digest of Annual Reports of State Boards for Vocational Education (annual)

Digest of Educational Statistics (annual)

ELSEGIS-Public Secondary School Course Offerings, Enrollment, and Curriculum Practices (periodic)

Fall Statistics of Public Elementary and Secondary Day Schools (annual)

National Assessment of Educational Progress (NAEP) (annual)

Patterns of Course Offerings and Enrollments in Public Secondary Schools (annual)

Projections of Educational Statistics (annual)

Statistics of Local Public School Systems (annual)

Statistics of Nonpublic Elementary and Secondary Schools (published in 1973)

Statistics of Public Schools (annual)

Statistics of State School Systems (biennial)

Survey of Public Libraries (triennial)

Vocational Education: Characteristics of Secondary Students and Staff (triennial)

Vocational and Technical Education (annual)

National Center for Health Statistics

Current Estimates from the Health Interview Survey (annual)

Health Examination Survey - Children, Ages 6-11 (cyclic)

Health Interview Survey (annual)

Health resource statistics (annual)

Monthly Vital Statistics Reports (monthly)

Morbidity and Mortality Weekly Report (weekly)

Natality Data Tape (annual)

Outpatient Psychiatric Clinics Special Statistical Reports (annual)

Statistics of Public Libraries Serving Areas with At Least 25,000 Inhabitants (irregular)

United States National Health Survey, Series 10-14 and 20-22 (irregular)

Vital and Health Statistics, Analytical Studies (irregular)

Vital Statistics of the United States (annual)

National Center for Social Statistics

Aid to Families with Dependent Children (AFDC) (biennial)

Office for Civil Rights

Elementary and Secondary School Civil Rights Survey (annual)

Social and Rehabilitation Services

Caseload Statistics of State Vocational Rehabilitation Agencies in Fiscal Year (annual)

Characteristics and Trends of Clients Rehabilitated in Fiscal Year (annual)

Juvenile Court Statistics (annual)

Residents in Public Institutions for the Mentally Retarded (annual)

State Vocational Rehabilitation Agency Program Data in Fiscal Year (annual)

Statistics on Public Institutions for Delinquent Children (irregular)

Social Security Administration

Prescription Drug Data Summary (annual)

Social Security Bulletin (monthly)

United States Department of the Interior

Bureau of Indian Affairs

Statistics Concerning Indian Education (annual)

United States Department of Justice

Bureau of Prisons

Statistical Report (annual)

Drug Enforcement Administration

Drug Abuse and Law Enforcement Statistics (irregular)

Federal Bureau of Investigation

Crime in the United States (annual)

Uniform Crime Reports of the United States (annual)

Law Enforcement Assistance Administration

Children in Custody (irregular)

National Prisoner Statistics (periodic)

United States Department of Labor

America Volunteers (periodic)

Bureau of Labor Statistics

Area Wage Surveys: Metropolitan Areas, United States and Regional Summaries (annual)

Area Wage Surveys: Selected Metropolitan Areas (annual)

Chartbook on Prices, Wages, and Productivity (monthly)

Current Wage Developments (monthly)

Employment and Earnings (monthly)

Employment and Earnings, States and Areas (annual)

Employment and Earnings, United States (annual)

Handbook of Labor Statistics (annual)

Monthly Labor Review (monthly)

Occupational Injuries and Illnesses by Industry (annual)

Special Labor Force Reports (irregular)

Manpower Administration

Area Trends in Employment and Unemployment (monthly)

Employment and Wages of Workers (quarterly)

Employment Service Statistics (monthly)

Manpower Report of the President (annual)

Handbook on Women Workers (periodic)

United States Department of the Treasury

Internal Revenue Service

Statistics of Income (annual)

State Data Sources (California)

Board of Control, Victims of Violent Crimes Program

numbers of claims heard and accepted, amounts of claims (annual)

Department of Education

school enrollment by grade, sex, ethnic group (annual)

student competency test scores by grade, school (annual)

staff numbers by educational category, sex, ethnic group (triennial)

Limited-English-speaking/Non-English-speaking survey (biennial)

Department of Health (annual unless otherwise noted)

Public Health Division:

child health and disability prevention; maternal and child health; infectious disease; cancer epidemiology; vital statistics. Most data by age, sex, ethnic group--some also broken down by geographic area

Social Service Division:

Title XX social services statistical reports; child protective services, children in foster care; adoptions

Substance Abuse Division:

drug related deaths, methadone maintenance program quarterly reports (geographic breakdown); state hospitals for the mentally disordered; client-oriented data acquisition process

Health Treatment Division:

state hospitals for the mentally disordered; local mental health programs; continuing care services

State Hospital Programs for the Developmentally Disabled:

admissions, placements, discharges, and patient deaths; residents at year's end; regional centers for the developmentally disabled

Medi-Cal Division:

computer files of eligible persons and of paid claims reports on eligible population and services rendered; monthly reports on services to children

Department of Justice

offender-based transaction system; arrest register; homicide data base; probation data base; offender-based correctional activity. Individual-level data; can be broken down by age, sex, city.

Criminal Justice Profile (statewide and for each county) (annual)

Highway Patrol

fatal and non-fatal accidents; pedestrian accidents, bicycle accidents (involving cars), degree of sobriety; fault; type of victim; licensed drivers; by age, sex, county, city, CHP beat (annual)

Youth Authority

offender-based institutional tracking system--characteristics and movement data on offenders in CYA institutions. By individual; can be broken down by age, sex, city (daily)

County Data Sources (Santa Clara)

Coroner

age of decedant, cause of death, sex, ethnicity, by individual for all deaths at which a coroner is present. Monthly and yearly reports on causes of death for children under five and

youths under 20. Records updated daily, transferred to Recorder after two years.

Hospital

vital statistics, morbidity data submitted to state, county health departments, county recorder

battered-child reports submitted to sheriff's office

data on poisoning submitted to National Clearinghouse of Poison Control Centers

Recorder--Vital statistics

births: name, city of birth, date and time, parents' names and address, birth defects and hereditary diseases (daily)

deaths: (see Coroner)

Registrar of Voters

name, address, birth date and birth place, occupation (optional), party affiliation of each registered voter (daily), votes cast by precinct, election rosters, kept for six months to two years, have names of voters

Sheriff

for all crimes, type of crime, physical characteristics of suspect, driver's license and social security numbers, age, address submitted to state Department of Justice; details of crime (for county use only) (daily)

City Data Sources (Palo Alto)

Boy Scouts

membership by age group and den, troop, or post; name, address, and parents' name of each member. (reported monthly to national office)

Girl Scouts

membership by age group and neighborhood; name, address, age, grade of each member, partial data on ethnic group, handicaps, and parents' occupations. (membership reported to national office annually)

Junior Achievement

attendance at meetings, number of projects in operation and dollar sales of each. (reported weekly to regional office)

Junior Statesmen Federation

membership of chapter and organization, attendance at meetings and major and minor conferences collected and reported annually. annual opinion poll on current topics conducted on 30,000 - 50,000 high-school-age youth; results published in June

Library

number of library cards; adult and juvenile books circulated by branch, circulation by Dewey Decimal Number (reported quarterly)

Recreation Department

participation in activities by age group (usually) and by sex (sometimes) (annual)

Red Cross

enrollments by age and grade in junior and senior lifesaving programs and in babysitting instruction

School District

data base: current students' grades, attendance, Special Education data, if any; parents' occupations; identified health status; competency test scores. current cumulative records back to 1972 on other students. communicable diseases reported weekly to county. annual report on vision and hearing testing. vocational education: work experience data, employer's name, type of job, evaluation. Longitudinal files on all Special Education students. follow-up data on former students

YMCA

membership and attendance by age and sex; numbers participating in leadership training (swimming instructors and camp leaders), cardiovascular fitness program, first-aid and CPR training

YWCA

membership, attendance by age group, sex, session (five per year) in classes, participation in teen workshops in job hunting skills